<Personal> Retirement

Retirement

Professor ISODA, Seiji
Advanced Research Center for Beam Science
— Electron Microscopy and Crystal Chemistry —

On 31 March, 2010, Dr. Seiji Isoda retired from Kyoto University after 35 years of service and was honored with the title of Professor Emeritus of Kyoto University. Dr. Isoda was born in Kumamoto Prefecture on 5 January, 1947. He graduated from Department of Physics, Faculty of Science, Tohoku University in 1969 and subsequently entered the Graduate School of Science, Kyoto University, where he studied polymer physics under the supervision of late Professor Kenjiro Asai. In 1983, he was granted the doctoral degree for the thesis entitled "Epitaxial Synthesis of Poly(p-xylylene)". In 1975, he was appointed Research Associate in the Institute for Chemical Research, Kyoto University, and he was promoted to Assistant Professor in 1983 and to Associate Professor in 1989. In 2001, he was appointed Professor in the Institute for Chemical Research, Kyoto University and directed the Laboratory of Electron Microscopy and Crystal Chemistry. Meanwhile, from 2005 to 2006, he served concurrently as the head of the Advanced Research Center for Beam Science.

Through his academic career, Dr. Isoda devoted himself to crystal chemistry using many types of microscope, focusing on structural analysis, growth mechanism and process of structural transformation of materials. Especially, he established the high resolution electron microscopy for organic materials by developing the image processing, the rapid correction of astigmatism of objective lens in high-voltage transmission electron microscope. Owing to the development of new methods, he realized the direct observation of organic molecules in thin film crystals at an 0.1 nm resolution, which opened the study of structural analysis at local area such as defects and interfaces in organic crystals based on the high resolution images.

He also contributed to further development in the electron crystallography based on the electron diffraction using a special electron detector, which was applied to structure determination of perylene derivatives and many other organic thin films or fine particles. In order to improve the resistance of organic materials to electron irradiation, he developed a cryogenic transmission electron microscopy, observing the specimen at liquid helium temperature. He made pioneering work in local structure analyses of polymerization process and the low temperature phase of organic crystals. This cryogenic observation method was combined with the rapid cooling of samples, which made it possible to observe metal clusters in liquid and crystals including water.

He extended his study to surface structure at the initial stage of epitaxial growth by using scanning probe microscopy. He found a new epitaxial mode called point-on-line coincidence and clarified growth modes in terms of the lattice interaction on substrate and intermolecular interaction using computational science approach. With his deep knowledge on crystal growth mechanism, he further investigated organic field effect transistors and organic photoelectric conversion devices, focusing on the development of new device structure with high efficiency.

Throughout his carrier, Dr. Isoda's scientific achievements were published in 206 original papers. He was frequently invited to international conferences and collaborated with many foreign scientists from England, Germany and China and so on. He also contributed to various scientific meetings and international congresses as an executive committee member. He served as a member of the editorial board of the journal published from the Japanese Society of Microscopy.

Dr. Isoda's contribution to Kyoto University and the Institute through his scientific, educational and administrative activities is greatly acknowledged.